

As many of you know, last year a proposal was approved to utilize an Oil Analysis Program in SLCSA Equipment were feasible. Since each piece of equipment is so valuable and equipment failures are so disruptive we agreed to buy into the Oil Analysis Program to attempt to anticipate and better monitor our equipment for many reasons.

In engines, oil analysis can provide information concerning the condition of the air intake system by monitoring the silicon (dirt) levels in the oil. The levels of iron and aluminum can warn of piston and cylinder wear before a major failure occurs. Bearing wear rates can be determined and action taken before the crankshaft becomes badly scored. Fuel dilution, anti-freeze leaks and water entry can be detected while they are still minor problems. The levels of contamination and combustion soot within the oil can indicate a restricted air intake system, ineffective oil filters, poor combustion or a rich air/fuel ratio.

In hydraulic systems, transmissions, gearboxes, differentials and other lubricated systems where combustion does not take place, the analysis of oil samples should also be done on a routine basis. High levels of aluminum can indicate a potential pump or converter failure. Transmission slippage is often indicated by high levels of copper, while high chromium levels can reveal scored hydraulic cylinder rods or gear and bearing wear.

The cleanliness of hydraulic oil systems is extremely important because of the very close tolerances that exist in the pumps, control valves and between the pistons and hydraulic cylinder walls. In fact, 75 percent of hydraulic system failures are caused by contamination through dust, dirt and condensation moisture. Therefore, oil analysis should be performed on a regular basis to monitor contamination levels.

Oil analysis will also be used effectively to determine the proper oil drain and filter change intervals in all types of lubricated systems. By eliminating too-frequent oil changes, you reduce the cost for oil and servicing, and also reduce the amount of used oil with which you must deal. This is an important pollution-prevention method—reducing the source. Greasing /Lubrication schedules will continue to be performed as indicated in Owner’s Manual / Maintenance Guidance Bulletins.

Moving forward, SLCSA Maintenance Coordinator will arrange initial fluid changes. In many areas, this has already been performed. SLCSAMC will perform or direct the execution of sampling procedures. If a situation occurs that warrants an immediate change of fluids other than routine added fluids to maintain capacity, SLCSAMC should be notified along with Executive Board as serious condition has occurred. Capture the discharged fluid for sampling and proper disposal. SLCSLA will also provide selected fluids to maintain capacities throughout the season. Grooming Areas need to identify any shortages prior to a crisis. **The sample results dictate the frequency of the oil and filter changes. SLCSAMC will forward the results / direction with associated fluids for changes.** If you feel that a fluid change is needed, please call for a test sample and SLCSAMC will run one for verification. If in fact a field sample is required, note the viscosity and type of oil, the hours or miles of service, and the make and model of the component or system from which the sample was taken. This information should be printed on a card usually provided in the oil sample carton.

This is a new procedure to most of us but it adds value back in our coffers when regimented. Oil Analysis will reduce repair bills, reduce catastrophic failures, increase machinery life, and reduce non-scheduled downtime. Our program is in no way meant to take away the critical responsibility of oversight on the grooming area assets but to provide a needed tool to continuously assess our equipment's health. I look forward to everyone's continued cooperation in regards to this program. If there are any questions please contact the Maintenance Coordinator or myself for input or clarification.

Regards,